

REMARKS/ARGUMENTS

Reconsideration of the subject application is requested. Claims 21-40 and 42-69 remain in the application. Claim 41 has been canceled. Claims 21, 24 and 42 have been amended to specify that the analog signal is delayed with respect to the digital signal. This is shown in the application in FIG. 4 and the description on pages 7 and 8 in the specification. Claims 37, 38, 52, 55, 59, 63 and 66 have been amended to specify that the redundant broadcast signal has a lower quality (where the redundant signal is an analog signal) or a lower data rate (where the redundant signal is a digital signal) than the primary broadcast signal. This is described in the specification on page 26. Claims 37, 38, 55 and 59 have been amended to specify that the redundant broadcast signal is used to produce an initial output signal. This is described in the specification on page 28. Claims 45 and 66 have been amended to clarify the claims by removing the reference to the selection of the signals. Claims 35, 45 and 69 have been editorially amended to improve the clarity of the claims.

In the Detailed Action portion of the Office Action, the abstract of the disclosure is objected to because it is too long (more than 25 lines) and written on two pages. This objection has been address by revising the abstract.

Claims 45 and 66 have been objected to because the feature "a blend control for selecting" was considered to be confusing. This objection has been addressed through the amendments to claims 45 and 66.

Claims 21-30, 35-36, 42-44, 49-69 have been rejected under 35 U.S.C. 102(e) as being anticipated by Kumar (US 5,949,796). This rejection is traversed.

Claim 21 has been amended to specify that the analog signal is delayed with respect to the digital signal. With respect to claim 21 the Office Action states that Kumar (US 5,949,796) shows delaying the digital signal with respect to the analog signal in FIG. 4, element 45; col. 38, lines 26-58. This is opposite to delaying the analog signal with respect to the digital signal as required by amended claim 21. In addition, upon review of Kumar (US 5,949,796), the Applicants respectfully submit that FIG. 4, element 45; col. 38, lines 26-58 of Kumar (US 5,949,796) neither discloses nor suggests any time diversity between an analog and a digital signal, but rather discloses time diversity between digital signals in the upper and lower

sidebands. FIG. 4 of Kumar shows a separate analog source and message source, and provides no teaching of redundancy between the analog and message sources.

As per claim 22, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 22 depends from claims 21, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 21 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 23 the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 22 depends from claim 21, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 21 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency, and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

Claim 24 has been amended to specify that the analog signal is delayed with respect to the digital signal. With respect to claim 24, the Office Action states that Kumar (US 5,949,796) shows means for delaying the digital signal with respect to the analog signal the reads on '796 (see FIG. 4, element 45; col. 38, lines 26-58). This is opposite to delaying the analog signal with respect to the digital signal as required by amended claim 21. In addition, upon review of Kumar (US 5,949,796), the Applicants respectfully submit that FIG. 4, element 45; col. 38, lines 26-58 of Kumar (US 5,949,796) neither discloses nor suggests any time diversity between an analog

and a digital signal, but rather discloses time diversity between digital signals in the upper and lower sidebands.

As per claim 25, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-58). Since claim 25 depends from claims 24, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 24 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-58 of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 26, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 26 depends from claim 24, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 24 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency, and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 27, the Office Action states that the analog signal being delayed with respect to the digital reads on '796 (see col. 59, line 58-col. 60, line 30). However, upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 59, line 58-col. 60, line 30 of Kumar (US 5,949,796) neither discloses nor suggests any time diversity between an analog and a digital signal, but rather discloses time diversity between digital signals in the upper and lower sidebands. The Office Action further states that the step of selecting one of the first and second demodulated signals to be used to produce an output signal reads on '796 (see col. 77, line 41-col. 78, line 10; col. 78, line 36-col. 3. However, the selection of Kumar is between the

digital signals in the upper and lower sidebands, not between the demodulated analog signal and the demodulated digital signal as required by claim 27.

As per claim 28, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly, col. 78, line 56-col. 79, line 3). Since claim 28 depends from claim 27, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 27 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 29, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 29 depends from claim 27, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 27 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 30, the Office Action states that the step of selecting one of the first and second demodulated signals to be used to produce an output signal comprises the step of: detecting degradation of one the first and second demodulated signals by determining one or more parameters selected from the group consisting of signal-to noise ratio, bit error rate, signal power level and cyclic redundancy check, reads on '796 (see col. 34, lines 52-65; col. 57, lines 36-56). Since claim 30 depends from claim 27, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 27.

As per claim 35, the Office Action states that the step of generating a second digital broadcast signal that is delayed in time with respect to the primary broadcast signal, with the second digital broadcast signal having a lower data rate than the first digital broadcast signal reads on '796 (see FIG. 4, element 49; col. 26, line 36-col. 27, line 29). This rejection is traversed. Upon review of Kumar '746, the Applicants respectfully submit that FIG. 4, element 49; col. 26, line 36-col. 27, line 29 of Kumar neither discloses nor suggests anything about the relative data rates of the two digital signals, or that a second digital broadcast signal has a lower data rate than the first digital broadcast signal. In fact, column 27, at lines 44-53 of Kumar shows an identical data rate of 300 kbps for each sideband.

As per claim 36, since claim 36 depends from claim 35, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 35.

Claim 42 has been amended to specify that the analog signal is delayed with respect to the digital signal. With respect to claim 42, the Office Action states that Kumar (US 5,949,796) shows a time delay for delaying the digital signal with respect to the analog signal in FIG. 4, element 45; col. 39, lines 13-32; col. 77, lines 13-20. This is opposite to delaying the analog signal with respect to the digital signal as required by amended claim 42. In addition, upon review of Kumar (US 5,949,796), the Applicants respectfully submit that FIG. 4, element 45; col. 39, lines 13-32; col. 77, lines 13-20 of Kumar (US 5,949,796) neither discloses nor suggests any time diversity between an analog and a digital signal, but rather discloses time diversity between digital signals in the upper and lower sidebands. FIG. 4 of Kumar shows a separate analog source and message source, and provides no teaching of redundancy between the analog and message sources.

As per claim 43, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 43 depends from claim 42, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 42 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same

audio information.

As per claim 44, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 44 depends from claim 42, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 42 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 49, the Office Action states that Kumar shows a second digital signal having a lower data rate than the first digital signal reads on '796 (see FIG. 4, element 49; col. 26, line 36-col. 27, line 29). This rejection is traversed. Upon review of Kumar '746, the Applicants respectfully submit that FIG. 4, element 49; col. 26, line 36-col. 27, line 29 of Kumar neither discloses nor suggests anything about the relative data rates of the two digital signals, or that a second digital broadcast signal has a lower data rate than the first digital broadcast. In fact, column 27, at lines 44-53 shows an identical data rate of 300 kbps for each sideband.

As per claim 50, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 50 depends from claim 49, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 49 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 51 the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 51 depends from claim 49, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 49 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

Claim 52 has been amended to require that the second digital signal has a lower data rate than the first digital signal. The rejection of amended claim 52 is traversed. Upon review of Kumar '746, the Applicants respectfully submit that Kumar neither discloses nor suggests anything about the relative data rates of the two digital signals, or that a second digital broadcast signal has a lower data rate than the first digital broadcast. In fact, column 27, at lines 44-53 shows an identical data rate of 300 kbps for each sideband.

As per claim 53, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 53 depends from claim 52, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 52 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 54, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from

about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 54 depends from claims 52, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 52 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 55, the Office Action states that Kumar shows a second digital signal having a lower data rate than the first digital signal (see FIG. 9, elements 213,215 and 229; col. 26, line 52-col. 27, line 65; col. 58, line 50-col. 59, line 24). This rejection is traversed. Upon review of Kumar '746, the Applicants respectfully submit that FIG. 9, elements 213,215 and 229; col. 26, line 52-col. 27, line 65; col. 58, line 50-col. 59, line 24 of Kumar neither disclose nor suggest anything about the relative data rates of the two digital signals, or that a second digital broadcast signal has a lower data rate than the first digital broadcast. In fact, column 27, at lines 44-53 shows an identical data rate of 300 kbps for each sideband. In addition, claim 55 has been amended to require using the second demodulated signal to produce an initial output signal; and subsequently producing an output signal by blending the first and second demodulated signals in response to a signal quality of the first demodulated signal. The cited references neither disclose nor suggest these features.

As per claim 56, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see abstract; col. 77, lines 40-61). Since claim 56 depends from claim 55, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 55 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that the abstract; and col. 77, lines 40-61 of Kumar (US 5,949,796) neither disclose nor suggest that the analog and digital signals represent the same audio information.

As per claim 57, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, line 31-col. 27, line 12), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, line 31-col. 27, line 12). Since claim 57 depends from claim 55, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 55 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 58, since claim 58 depends for claim 55, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 55.

The rejection of claim 59 is traversed through the amendment of claim 59. Claim 59 has been amended to specify that the redundant broadcast signal has a lower quality (where the redundant signal is an analog signal) or a lower data rate (where the redundant signal is a digital signal) than the primary broadcast signal, and to specify that the redundant broadcast signal is used to produce an initial output signal. In addition, claim 59 has been amended to require using the second demodulated signal to produce an initial output signal; and subsequently producing an output signal by blending the first and second demodulated signals in response to a signal quality of the first demodulated signal. The cited references neither disclose nor suggest these features.

As per claim 60, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 77, lines 40-61; col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 60 depends from claim 59, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 59 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 77, lines 40-61; col. 78, lines 35-col. 79, line 3, particularly col. 78,

line 56-col. 79, line 3, of Kumar (US 5,949,796) neither disclose nor suggest that the analog and digital signals represent the same audio information.

As per claim 61, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (col. 26, lines 52-67). Since claim 61 depends from claim 59, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 59 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 62, since claim 62 depends for claim 59, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 59.

Claim 63 has been amended to specify that the redundant broadcast signal has a lower quality (where the redundant signal is an analog signal) or a lower data rate (where the redundant signal is a digital signal) than the primary broadcast signal. The rejection of claim 63 is traversed through the amendment of claim 63. The Applicants respectfully submit that the references neither disclose nor suggest this element of claim 63.

As per claim 64, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 64 depends from claim 63, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 63 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 65, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (col. 26, lines 52-67). Since claim 65 depends from claims 63, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 63 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

Claim 66 has been amended to specify that the redundant broadcast signal has a lower quality (where the redundant signal is an analog signal) or a lower data rate (where the redundant signal is a digital signal) than the primary broadcast signal. The rejection of claim 66 is traversed through the amendment of claim 66. The Applicants respectfully submit that the references neither disclose nor suggest this element of claim 66.

As per claim 67, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information. Since claim 67 depends from claims 66, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 66 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 68, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (col. 26, lines 52-67). Since claim 68 depends from claims 66, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 66 and for the following reason. Kumar shows upper

sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

As per claim 69, since claim 69 depends for claim 66, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 66.

Claims 31-34 and 45-48 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar in view of Zegers (US 3,781,795).

This rejection is traversed. Claims 31 and 45 both require that the analog signal is delayed with respect to the digital signal. The Applicants respectfully submit that this feature is neither disclosed nor suggested by the cited references. In addition, as per claim 31, the Office Action notes that Kumar does not explicitly teach about delaying the first demodulated signal with respect to the second demodulated signals so as to select one of the first and second demodulated signal for producing an output signal in response to the selected one of the first and the second signals, as claimed by the Applicants. However, Zegers in "Error-correcting data transmission system" has been cited as teaching a transmission system wherein two versions of the same data are transmitted from a transmitter station to a receiver station via two channels having a mutual time difference, and in which a coded version of the non-delayed data is added to delayed. The Office Action further states that from Zegers' teaching, one can see that one of the two channels can be analog and the other digital, corresponding to Kumar's analog and digital signals. Therefore, it was considered to have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kumar's in-band on-channel audio broadcast system with the teaching of Zegers for the advantage of correcting an error detected in the second channel with the error pattern detected in the first channel (see col. 1, line 67-col. 2, line 3). However, the Applicants submit that Zegers neither discloses nor suggests that its teachings can be applied to analog signals in combination with digital signals. Thus, there is no suggestion in the references that any advantage would be gained by combining their teachings, and if one

were to attempt to combine their teachings, there is no suggestion that Zegers can be applied to the combination of digital and analog signals.

As per claim 32, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 32 depends from claim 31, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 31 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 33, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 33 depends from claim 31, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 31 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

Since claim 34 depends from claim 31, the rejection of claim 33 is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 31.

Claim 45 has been amended to remove that reference to selecting between signals. Therefore, the interpretation of the blend control as a selector is not applicable to the amended claim 45. In addition, as stated above, the Applicants submit that Zegers neither discloses nor suggests that his teachings can be applied to analog signals in combination with digital signals. Thus, there is no suggestion in the references that any advantage would be gained by combining

their teachings, and if one were to attempt to combine their teachings, there is no suggestion that Zegers can be applied to the combination of digital and analog signals.

As per claim 46, the Office Action states that the analog signal and digital signal of Kumar represent the same audio information (see col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3). Since claim 46 depends from claim 45, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 45 and for the following reason. Upon review of Kumar (US 5,949,796), the Applicants respectfully submit that col. 78, lines 35-col. 79, line 3, particularly col. 78, line 56-col. 79, line 3, of Kumar (US 5,949,796) neither discloses nor suggests that the analog and digital signals represent the same audio information.

As per claim 47, the Office Action states that a method of in-band on-channel broadcasting wherein the upper sideband ranges from about 130 kHz to about 199 kHz from the first carrier, and reads on '796 (see col. 26, lines 52-67), and the lower sideband ranges from about -130 kHz to about -199 kHz from the carrier, and reads on '796 (see col. 26, lines 52-67). Since claim 47 depends from claim 45, this rejection is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 45 and for the following reason. Kumar shows upper sidebands at 100 kHz to 200 kHz from the channel center frequency and lower sidebands at -100 kHz to -200 kHz from the channel center frequency. By restricting the upper sideband from about 130 kHz to about 199 kHz from the channel center frequency and the lower sideband ranges from about -130 kHz to about -199 kHz from the channel center frequency, the present invention avoids interference between the analog modulated carrier and the digitally modulated subcarriers.

Since claim 48 depends from claim 45, the rejection of claim 45 is traversed for the reasons set forth above with respect to the traversal of the rejection of claim 45.

Claims 37-41 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar in view of Jayant et al. (Jayant) (US 4,291,405).

As per claim 37, the Office Action states that Kumar does not explicitly teach about blending an output of a receiver from the primary broadcast signal to the redundant broadcast signal when the primary broadcast signal is degraded. However, Jayant was cited as

teaching reducing error in a digital channel transmission and reception wherein a receiver detects a corrupted signal and in response, using a technique of modifying the corrupted signal with a redundant replica of a second signal transmitted at a transmission site (see col. 2, line 27-col. 3, line 6; col. 3, line 57-col. 4, line 52). Therefore, it was considered to have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kumar's receiver with the teaching of Jayant for the advantage of modifying a degraded/corrupted signal with a replica of the same signal as provided in Jayant's teaching. This rejection is traversed.

Claim 37 has been amended to specify that the redundant broadcast signal has a lower quality (where the redundant signal is an analog signal) or a lower data rate (where the redundant signal is a digital signal) than the primary broadcast signal, and to specify that the redundant broadcast signal is used to produce an initial output signal. The Applicants respectfully submit that the cited references neither disclose nor suggest such characteristics in a redundant signal.

As per claim 38, the Office Action states that Kumar does not explicitly teach blending an output of a receiver from the primary broadcast signal to the redundant broadcast signal when the primary broadcast signal is degraded, as claimed by Applicants. However, Jayant was cited as providing this teaching. This rejection is traversed. Claim 38 has been amended to require a lower quality or a lower data rate than the primary broadcast signal and being delayed in time with respect to the primary broadcast signal, and to include the step of: initially using the redundant broadcast signal to produce an output; and blending the output from the redundant broadcast signal to the primary broadcast signal. The Applicants respectfully submit that the cited references do not disclose or suggest these features.

Since claims 39 and 40 depend from claim 38, the rejections of claims 39 and 40 are traversed for the reasons set forth above with respect to the traversal of the rejection of claim 38.

The rejection of claim 41 is moot in view of the cancellation of claim 41.

Claims 21-69 have been rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-34 of U.S. Patent No. 6,178,317 B1. Although the conflicting claims are not identical, they were not considered to be patentably distinct from each other because the difference between the two sets of claims is that

the claims in the current application are more broader than the claims in the patent. To address this rejection, a terminal disclaimer is enclosed.

All claims in the application are believed to be in allowable form. Allowance of the application is requested.

Respectfully submitted,

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